



USDA, National Agricultural Statistics Service

Indiana Crop & Weather Report

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USDA, NASS, Indiana Field Office
1435 Win Hentschel Blvd.Suite 110
West Lafayette, IN 47906-4151(765) 494-8371
nass-in@nass.usda.gov

CROP REPORT FOR WEEK ENDING JULY 24

AGRICULTURAL SUMMARY

Soaring temperatures and limited precipitation stressed crops and livestock last week, according to the Indiana Field Office of USDA's National Agricultural Statistics Service. Six of nine districts recorded triple digit temperatures and high humidity sent heat indices even higher. Most of the state received limited precipitation at some point during the week, but relief was minimal when corn was in the critical pollination stage. Storms that carried rainfall also knocked down corn in some areas, with shallow rooted corn especially vulnerable. Corn is firing in fields on high ground and well drained soils. County fair participants worked hard to keep animals comfortable under extreme conditions.

FIELD CROPS REPORT

There were 6.2 **days suitable for field work**. Sixty-two percent of the **corn** crop has **silked** compared with 90 percent last year and 71 percent for the 5-year average. By region, 59 percent has silked in the north, 64 percent central and 65 percent in the south. **Corn condition** is rated 46 percent good to excellent compared with 62 percent last year at this time.

Fifty-one percent of the **soybean** acreage is **blooming** compared with 77 percent last year and 60 percent for the 5-year average. By region, 59 percent has bloomed in the north, 49 percent central and 41 percent in the south. Seven percent of the soybean acreage is **setting pods** compared with 39 percent last year and 18 percent for the 5-year average. **Soybean condition** is rated 47 percent good to excellent compared with 64 percent last year at this time.

Major activities during the week included: baling straw, cutting hay, monitoring irrigation systems, applying herbicides where temperatures permit, detasseling seed corn, attending county fairs, mowing roadsides and taking care of livestock.

LIVESTOCK, PASTURE AND RANGE REPORT

Pasture condition declined and is now rated 42 percent good to excellent compared with 67 percent last year. The **second cutting of alfalfa hay** is 81 percent complete compared with 82 percent for both last year and the 5-year average. **Livestock** were under stress from the extreme heat and humidity with some death loss reported especially in poultry.

CROP PROGRESS

Crop	This Week	Last Week	Last Year	5-Year Avg.
Percent				
Corn Silked (Tasseled)	62	31	90	71
Soybeans Blooming	51	31	77	60
Soybeans Setting Pods	7	NA	39	18
Alfalfa, Second Cutting	81	64	82	82

CROP CONDITION

Crop	Very Poor	Poor	Fair	Good	Excellent
Percent					
Corn	5	13	36	36	10
Soybean	5	11	37	39	8
Pasture	5	16	37	37	5

SOIL MOISTURE & DAYS SUITABLE FOR FIELDWORK

Soil Moisture	This Week	Last Week	Last Year
Percent			
Topsoil			
Very Short	14	6	2
Short	39	35	18
Adequate	44	53	72
Surplus	3	6	8
Subsoil			
Very Short	7	4	1
Short	29	23	19
Adequate	60	66	73
Surplus	4	7	7
Days Suitable	6.2	6.2	4.8

CONTACT INFORMATION

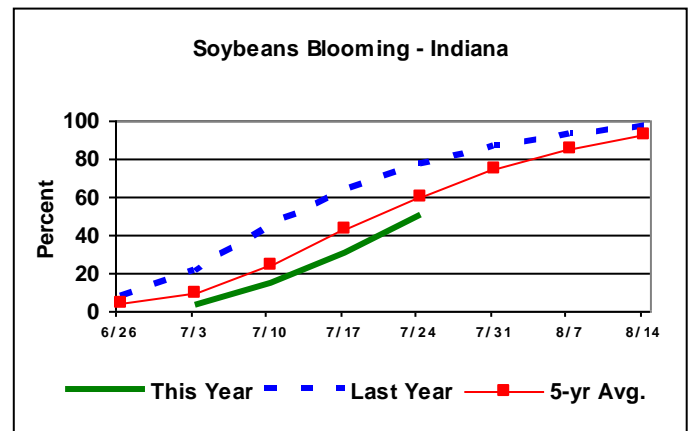
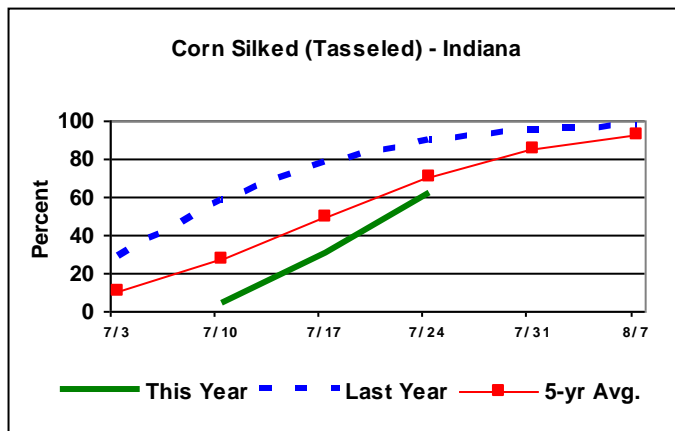
--Greg Preston, Director

--Kif Hurlbut, Agricultural Statistician

E-mail Address: nass-in@nass.usda.gov

http://www.nass.usda.gov/Statistics_by_State/Indiana/

Crop Progress



Other Agricultural Comments And News

Tassel Emergence & Pollen Shed

- Corn produces individual male and female flowers on the same plant.
- The tassel represents the male flower of the corn plant.

Depending on the year, Indiana's corn crop typically enters the critical flowering stages of pollen shed and silk emergence sometime between late June to late July. Success or failure during this period of the corn plant's life greatly influences the potential grain yield at harvest time.

As important as this process is to the determination of grain yield, it is surprising how little some folks know about the whole thing. Rather than leaving you to learn about such things "in the streets", I've developed this article and the accompanying one on silking ([Nielsen, 2010](#)) that describe the ins and outs of sex in the corn field.

Remember that corn has both male flowers and female flowers on the same plant (a flowering habit called [monoecious](#) for you trivia fans.) Interestingly, both flowers are initially bisexual (aka "perfect"), but during the course of development the female components (gynoecia) of the male flowers and the male components (stamens) of the female flowers abort, resulting in tassel (male) and ear (female) development.

Growth Stage VT (Tasseling)

Portions of the tassel may be visible before the plant technically reaches the last leaf stage (final visible leaf collar) has occurred. By definition, growth stage VT occurs when the last branch of the tassel emerges from the whorl ([Ritchie et al., 1993](#)). This authoritative source furthermore stated that growth stage VT is "initiated when the last branch of the tassel is completely visible and the silks have not yet emerged." Once upon a time, that exact developmental sequence may have been true, but today's hybrids tend to behave differently. It is not uncommon for silk emergence to begin not only prior to the last tassel branch appearing from the whorl, but also prior to the exertion of anthers and pollen shed ([Nielsen, 2009](#)).

Plant height reaches its maximum at or shortly after growth stage VT as the final stalk internodes complete

their elongation. The corn plant is most vulnerable to hail damage at growth stage VT because all of its leaves are exposed. Complete (100 %) leaf loss at growth stage VT will usually result in complete (100 %) yield loss by harvest. Even if pollination results in successful fertilization of the ovules, entire ear shoots will usually die because so few leaves remain to produce the necessary carbohydrates (by photosynthesis) to complete grain fill.

Tassel Morphology

Approximately 1,000 individual spikelets form on each tassel and each one bears two florets encased in two large glumes. Each floret contains three anthers. An anther and its attached filament comprise the stamen of the male flower. The anthers are those "thingamajigs" that hang from the tassel during pollination. Under a magnifying lens, anthers look somewhat like the double barrel of a shotgun. Do the math and you will realize that an individual tassel produces approximately 6,000 pollen-bearing anthers, although hybrids can vary greatly for this number.

As these florets mature, elongation of the filaments helps exert the anthers from the glumes. Pollen is dispersed through pores that open at the tips of the anthers. Pollen shed usually begins in the mid-portion of the central tassel spike and then progresses upward, downward and outward over time. Anthers typically emerge from the upper floret of the pair first, while those from lower floret typically emerge later the same day or on following days. Spent anthers eventually drop from the tassel and are sometimes mistaken for the pollen when observed on the leaves or ground.

The yellow or white "dust-like" pollen that falls from a tassel represents millions of individual, nearly microscopic, spherical, yellowish- or whitish translucent pollen grains. Estimates of the total number of pollen grains produced per tassel range from 2 to 25 million. Each pollen grain contains the male genetic material necessary for fertilizing the ovary of one potential kernel.

(continued on page 4)

Weather Information Table

Week Ending Sunday, July 24, 2011

Station	Past Week Weather Summary Data							Accumulation				
	Air							April 1, 2011 through				
	Temperature				Precip.	4 in	Avg	July 24, 2011				
								Precipitation		GDD Base 50°F		
	Hi	Lo	Avg	DFN	Total	Days	Soil Temp	Total	DFN	Days	Total	DFN
Northwest (1)												
Chalmers_5W	99	70	84	+10	0.18	2		22.38	+8.09	50	1695	-18
Francesville	98	71	84	+11	0.52	3		20.21	+5.80	52	1688	+120
Valparaiso_AP_I	101	70	84	+11	0.33	3		18.37	+3.17	49	1708	+176
Wanatah	100	68	82	+10	0.72	4	86	21.70	+7.00	62	1513	+50
Winamac	99	71	84	+11	1.12	4	83	23.37	+8.96	61	1616	+48
North Central (2)												
Plymouth	100	71	84	+11	1.43	4		21.37	+6.25	56	1686	+51
South_Bend	99	72	84	+11	0.93	4		21.19	+7.06	58	1754	+239
Young_America	96	68	84	+11	0.05	1		20.73	+6.87	43	1766	+165
Northeast (3)												
Fort_Wayne	100	72	85	+12	0.33	3		17.93	+4.84	54	1921	+330
Kendallville	98	71	83	+11	1.11	5		20.24	+6.39	71	1684	+188
West Central (4)												
Greencastle	95	69	82	+7	0.00	0		23.33	+7.09	54	1771	-47
Perrysville	99	74	85	+12	0.00	0	93	18.62	+3.01	48	1943	+241
Spencer_Ag	100	72	85	+11	0.00	0		22.19	+5.52	50	1938	+236
Terre_Haute_AFB	99	71	85	+9	0.24	1		22.11	+6.33	53	2091	+275
W_Lafayette_6NW	98	69	85	+12	0.00	0	89	23.61	+9.26	51	1855	+251
Central (5)												
Eagle_Creek_AP	98	76	87	+11	0.00	0		19.76	+5.09	54	2108	+309
Greenfield	99	73	85	+11	0.06	1		23.84	+7.85	59	1942	+230
Indianapolis_AP	100	75	87	+12	0.00	0		18.82	+4.15	50	2156	+357
Indianapolis_SE	97	70	85	+9	0.15	1		24.61	+9.41	52	1879	+103
Tipton_Ag	98	68	84	+12	0.00	0	90	23.51	+9.05	54	1821	+271
East Central (6)												
Farmland	99	70	84	+12	1.76	2	92	17.47	+3.05	58	1836	+330
New_Castle	99	64	83	+10	1.33	2		24.80	+9.01	49	1781	+241
Southwest (7)												
Evansville	99	74	86	+8	0.00	0		32.77	+17.35	47	2435	+315
Freelandville	98	75	86	+10	0.00	0		23.28	+7.35	42	2179	+298
Shoals_8S	98	70	84	+8	0.00	0		29.23	+12.03	42	2047	+241
Stendal	98	73	84	+7	0.00	0		37.73	+20.62	46	2229	+250
Vincennes_5NE	99	73	86	+10	0.00	0	88	29.92	+13.99	46	2238	+357
South Central (8)												
Leavenworth	97	72	84	+9	0.55	3		30.40	+13.03	55	2198	+395
Oolitic	97	69	82	+8	4.73	2	85	32.10	+15.81	53	1934	+216
Tell_City	95	75	85	+8	0.00	0		31.10	+13.80	46	2297	+293
Southeast (9)												
Brookville	101	72	86	+12	0.02	1		23.84	+8.20	51	2006	+391
Greensburg	100	73	86	+13	0.00	0		26.21	+10.42	48	2106	+425
Seymour	96	71	82	+9	0.27	2		27.44	+11.75	45	1952	+217

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DFN = Departure From Normal.

GDD = Growing Degree Days.

Precipitation (Rainfall or melted snow/ice) in inches.

Precipitation Days = Days with precip of .01 inch or more.

Air Temperatures in Degrees Fahrenheit.

For more weather information, visit www.awis.com or call 1-888-798-9955.

Tassel Emergence & Pollen Shed (continued)

The outer membrane of a pollen grain is very thin. Once dispersed into the atmosphere, pollen grains remain viable for only a few minutes before they desiccate. Yet, with only a 15 mph wind, pollen grains can travel as far as 1/2 mile within those couple of minutes.

Therein lies the concern of the potential for pollen “drift” from a transgenic corn field to an adjacent non-transgenic corn field and the risk of transgenic “contamination” of grain intended for non-transgenic markets. The good news is that recent research suggests that the overwhelming majority of a corn field’s pollen load is shed in the field itself.

All of the pollen from a single anther may be released in as little as three minutes. All the anthers on an individual tassel may take as long as seven days to finish shedding pollen, although the greatest volume of pollen is typically shed during the second and third day of anther emergence. Because of natural field variability in plant development, a whole field may take as long as 14 days to complete pollen shed.

Peak pollen shed usually occurs in mid-morning. Some research indicates that pollen shed decreases after temperatures surpass 86F. A second “flush” of pollen often occurs in late afternoon or evening as temperatures cool. Pollen shed may occur throughout most of the day under relatively cool, cloudy conditions.

Weather conditions influence pollen shed. If the anthers are wet, the pores will not open and pollen will not be released. Thus, on an average Indiana summer morning following a heavy evening dew, pollen shed will not begin until the dew dries and the anther pores open. Similarly, pollen is not shed during rainy conditions. Cool, humid temperatures delay pollen shed, while hot, dry conditions hasten pollen shed.

Extreme heat stress (100F or greater) can kill corn pollen, but fortunately the plant avoids significant pollen loss by virtue of two developmental characteristics. First of all,

corn pollen does not mature or shed all at once. Pollen maturity and shed occur over several days and up to two weeks. Therefore, a day or two of extreme heat usually does not affect the entire pollen supply. More importantly, the majority of daily pollen shed occurs in the morning hours when air temperature is much more moderate.

**Pictures for this article can be viewed online at:

<http://www.agry.purdue.edu/ext/corn/news/timeless/Tassels.html>

Related Reading

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